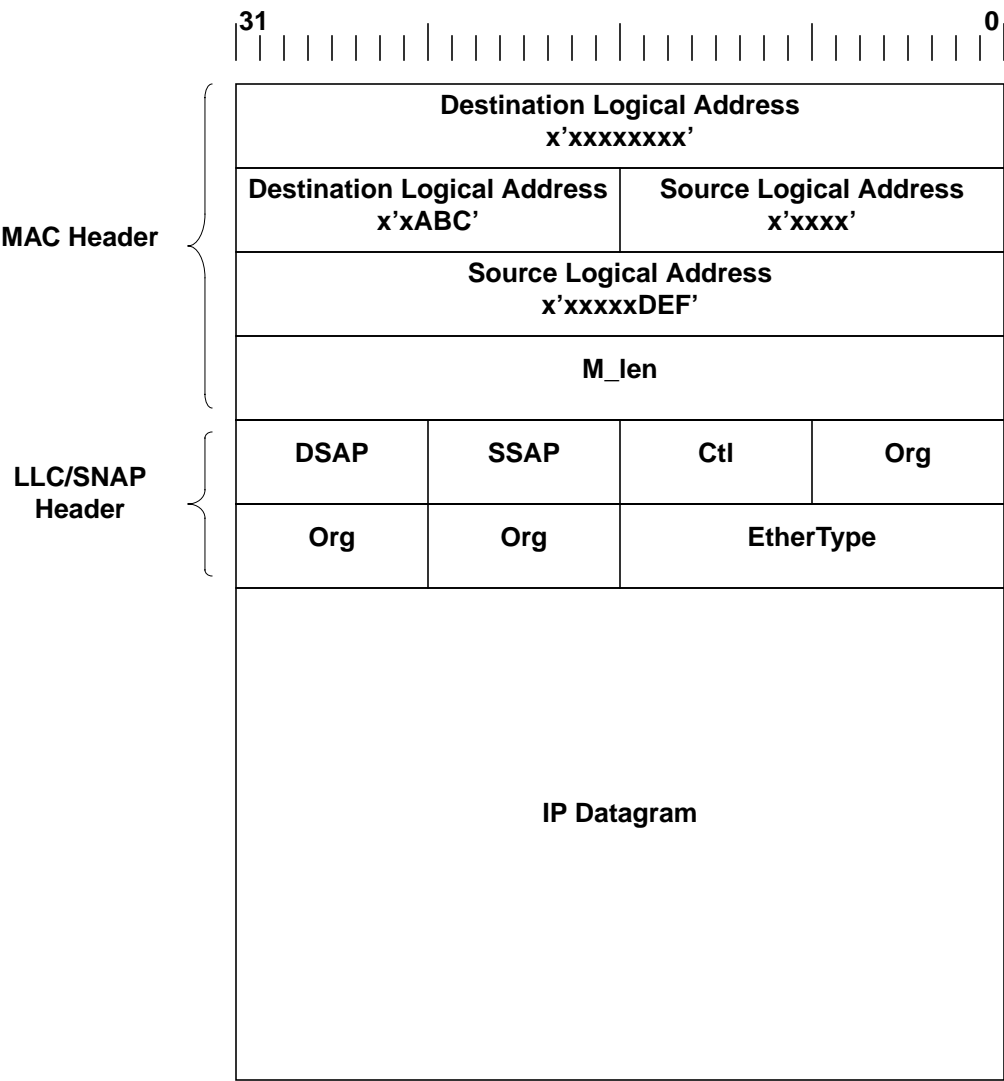# HIPPI-6400 To HIPPI-800 IP Translation

## (Normative Annex)

Since HIPPI-6400-PH and IP Over HIPPI both contain the LLC/SNAP Header directly in front of the IP Datagram payload, the only translation required is between the HIPPI-6400-PH MAC Header and the HIPPI I-Field, FP Header, and LE Field.

When translating from IP Over HIPPI to HIPPI-6400-PH the I-Field, FP Header, and LE Field are discarded and a MAC header is created as shown in figure 0-1.
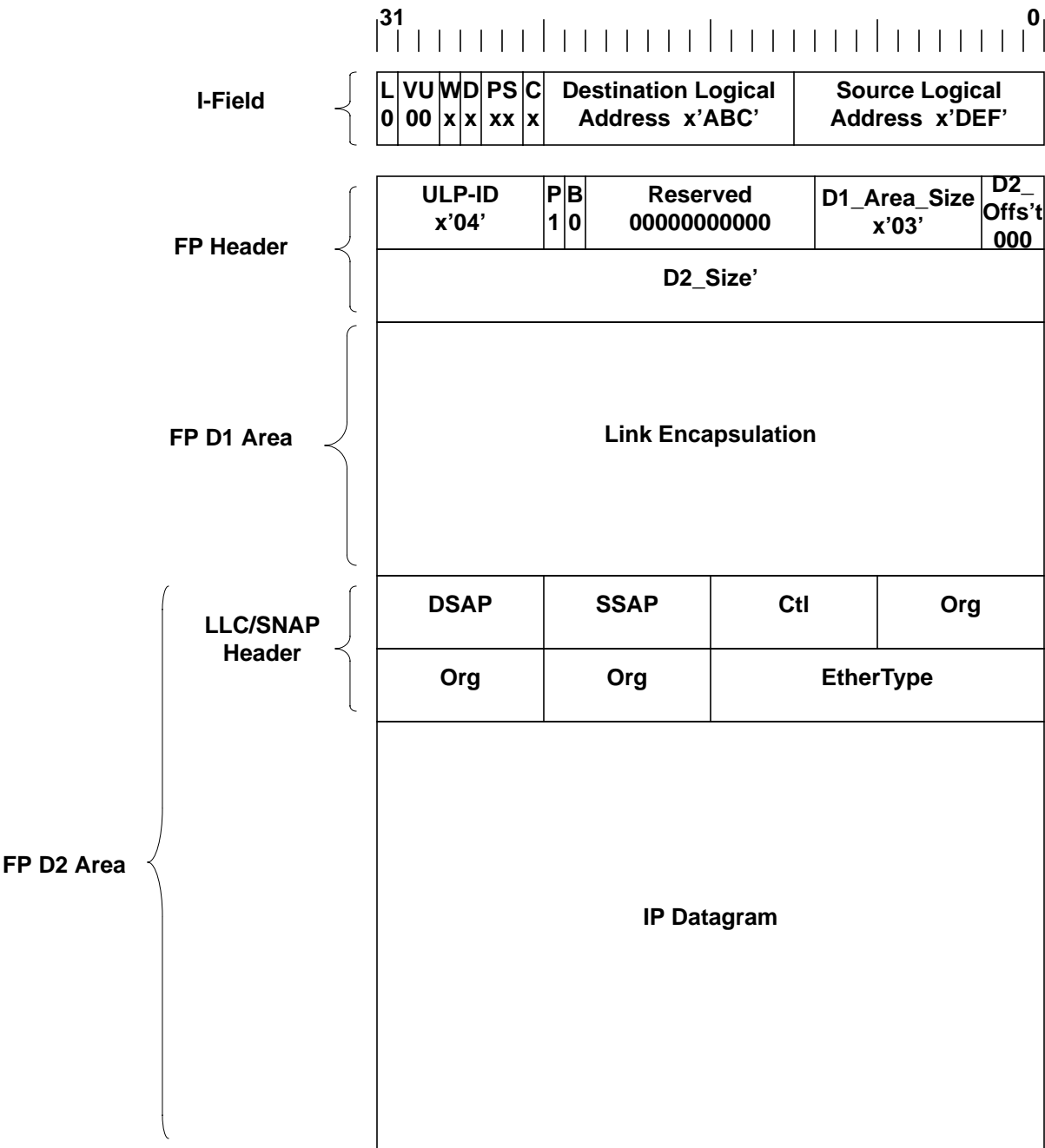
When translating from HIPPI-6400-PH to IP Over HIPPI the MAC Header is discarded and the I-Field, FP Header, and LE Field are created as shown in figure 0-2 and figure 0-3.

## Figure 0-1  IP Over HIPPI-6400-PH

```
31                                                    0
```

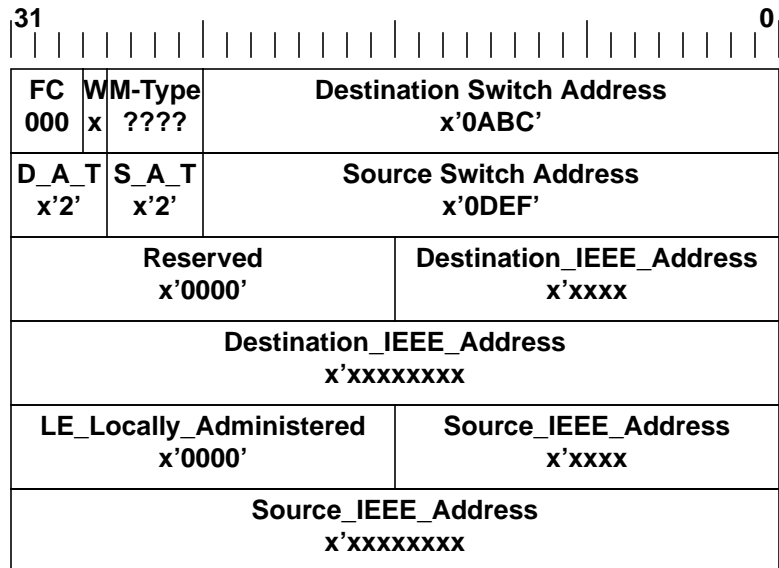| MAC Header | Destination Logical Address x'xxxxxxxx' | | | |
| | Destination Logical Address x'xABC' | | Source Logical Address x'xxxx' | |
| | Source Logical Address x'xxxxxDEF' | | | |
| | M_len | | | |
| LLC/SNAP Header | DSAP | SSAP | Ctl | Org |
| | Org | Org | EtherType | |
| | IP Datagram | | | |

1.  **ABC = Destination address to/from HIPPI I-Field**
2.  **DEF = Source address to/from HIPPI I-Field**
3.  **M_Len = HIPPI FP Header D2_Size -24 Bytes**

**Figure 0-2  IP Over HIPPI-800**

| | 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 |

**I-Field**

| L 0 | VU 00 | W x | D x | PS xx | C x | Destination Logical Address  x'ABC' | Source Logical Address  x'DEF' |
|---|---|---|---|---|---|---|---|

**FP Header**

| ULP-ID x'04' | P 1 | B 0 | Reserved 00000000000 | D1_Area_Size x'03' | D2_ Offs't 000 |
|---|---|---|---|---|---|
| D2_Size' | | | | | |

**FP D1 Area**

| Link Encapsulation |
|---|

**LLC/SNAP Header**

| DSAP | SSAP | Ctl | Org |
|---|---|---|---|
| Org | Org | EtherType | |

**FP D2 Area**

| IP Datagram |
|---|

1.  **ABC = Destination address from HIPPI-6400 MAC Header**
2.  **DEF = Source address from HIPPI-6400 MAC Header**
3.  **D2_Size = HIPPI-6400-PH M_Len + 24 bytes**

**Figure 0-3  LE Field**

| 31 | | | | 0 |
|---|---|---|---|---|
| **FC**<br>**000** | **W**<br>**x** | **M-Type**<br>**????** | **Destination Switch Address**<br>**x'0ABC'** | |
| **D_A_T**<br>**x'2'** | **S_A_T**<br>**x'2'** | | **Source Switch Address**<br>**x'0DEF'** | |
| **Reserved**<br>**x'0000'** | | | **Destination_IEEE_Address**<br>**x'xxxx** | |
| **Destination_IEEE_Address**<br>**x'xxxxxxxx** | | | | |
| **LE_Locally_Administered**<br>**x'0000'** | | | **Source_IEEE_Address**<br>**x'xxxx** | |
| **Source_IEEE_Address**<br>**x'xxxxxxxx** | | | | |

1. **ABC = Destination address from HIPPI-6400 MAC Header**
2. **DEF = Source address from HIPPI-6400 MAC Header**
3. **Destination_IEEE_Address copied from HIPPI-6400 MAC Destination Logical Address**
4. **Source_IEEE_Address copied from HIPPI-6400 MAC Source Logical Address**
5. **Since HIPPI-6400 does not support source routing, D_A_T and S_A_T must be x'2'**

OPEN ISSUE:

What needs to be put in the M-Type field?  The translator could look at the EtherType field do determine if this is ARP, RARP, or something else but the translator does not know if this is a request or response.